

CLAIMS:

1. A maintenance system of a substrate processing apparatus, comprising:

5 a remote operation unit for operating said substrate processing apparatus from a remote place by transmitting a remote operation information to a side of said substrate processing apparatus through a communication network and providing said remote operation information to said substrate processing apparatus; and

10 a communication control unit for receiving said remote operation information transmitted to the side of said substrate processing apparatus and providing said remote operation information to said substrate processing apparatus,

15 wherein said communication control unit provides said remote operation information to said substrate processing apparatus only when there is an allow setting for a remote operation by a worker in the side of said substrate processing apparatus.

2. The maintenance system as set forth in claim 1,

20 wherein said communication control unit comprises an allow-setting section for performing the allow setting of the remote operation and said allow-setting section is provided only to the side of said substrate processing apparatus of said communication network.

25 3. The maintenance system as set forth in claim 1,

wherein the allow setting of the remote operation is divided into plural

stages.

4. The maintenance system as set forth in claim 1, further comprising:
a sensor for detecting an approach of a person to said substrate processing apparatus in the side of said substrate processing apparatus.

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5. The maintenance system as set forth in claim 1,
wherein an information communication performed through said communication network is enabled only when there is an allow setting for a communication.

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6. The maintenance system as set forth in claim 3,
wherein an allow setting of the remote operation accompanying a driving of said substrate processing apparatus and an allow setting of the remote operation not accompanying the driving of said substrate processing apparatus are included in separate stages.

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7. The maintenance system as set forth in claim 6,
wherein the remote operation accompanying the driving of said substrate processing apparatus is a remote operation accompanying a physical movement with respect to various types of elements including a substrate carrier member in said substrate processing apparatus, and

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wherein the remote operation not accompanying the driving of said substrate processing apparatus is a remote operation not accompanying the physical movement with respect to the various types of elements.

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8. The maintenance system as set forth in claim 6,

wherein the remote operation accompanying the driving of said substrate processing apparatus comprising:

a position adjustment for a substrate carrier arm, a resist solution discharge nozzle in a resist coating unit and a developing solution discharge
5 nozzle in a developing unit in said substrate processing apparatus, and

a movement confirmation of the substrate carrier arm, the resist solution discharge nozzle and the developing solution discharge nozzle, and

wherein the remote operation not accompanying the driving of said substrate processing apparatus comprising:

10 a setting change for a discharge amount of the resist solution, a discharge pressure of the resist solution, a turning speed of a substrate, an atmospheric temperature and an atmospheric humidity in the resist coating unit,

a setting change for a discharge amount of the developing solution, a
15 discharge pressure of the developing solution, an atmospheric temperature and an atmospheric humidity in the developing unit, and

a setting change for a heating temperature and a heating time of the substrate in a heating unit.

20 9. The maintenance system as set forth in claim 4,

wherein an operation for starting a detection by said sensor can be performed in the side of said substrate processing apparatus or in the side of said remote operation unit with said communication network put therebetween; and

25 wherein an operation for stopping the detection by said sensor can be performed only in the side of said substrate processing apparatus.

10. The maintenance system as set forth in claim 4,
wherein said sensor can selectively detect the approach of the person
other than workers identified in advance.

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11. A substrate processing apparatus, comprising:
various types of elements including a substrate carrier member for
performing a substrate processing; and

a control section in which a remote operation information transmitted
10 from a remote control unit in a remote place through a communication
network is provided only when there is an allow setting of a remote operation
by a worker of said substrate processing apparatus with the safety of the
remote operation work being confirmed, and said various types of elements
are controlled based on the provided remote operation information.

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12. The substrate processing apparatus as set forth in claim 11, further
comprising:

an allow-setting section for performing the allow setting of the remote
operation provided only in a side of said substrate processing apparatus of the
20 said communication network.

13. The substrate processing apparatus as set forth in claim 11,
wherein the allow setting of the remote operation is divided into plural
stages.

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14. The substrate processing apparatus as set forth in claim 11, further

comprising:

a sensor for detecting an approach of a person to said substrate processing apparatus.

5 15. The substrate processing apparatus as set forth in claim 11,
 wherein an information communication performed through said
communication network is enabled only when there is an allow setting for a
communication.

10 16. The substrate processing apparatus as set forth in claim 13,
 wherein an allow setting of the remote operation accompanying a
driving of said substrate processing apparatus and an allow setting of the
remote operation not accompanying the driving of said substrate processing
apparatus are included in separate stages.

15 17. The substrate processing apparatus as set forth in claim 16,
 wherein the remote operation accompanying the driving of said
substrate processing apparatus is a remote operation accompanying a physical
movement with respect to various types of elements, and

20 wherein the remote operation not accompanying the driving of said
substrate processing apparatus is a remote operation not accompanying the
physical movement with respect to the various types of elements.

18. The substrate processing apparatus as set forth in claim 16,
25 wherein the remote operation accompanying the driving of said
substrate processing apparatus comprising:

a position adjustment for a substrate carrier arm, a resist solution discharge nozzle in a resist coating unit and a developing solution discharge nozzle in a developing unit, and

a movement confirmation of the substrate carrier arm, the resist
5 solution discharge nozzle and the developing solution discharge nozzle, and

wherein the remote operation not accompanying the driving of said substrate processing apparatus comprising:

a setting change for a discharge amount of the resist solution, a discharge pressure of the resist solution, a turning speed of a substrate, an
10 atmospheric temperature and an atmospheric humidity in the resist coating unit,

a setting change for a discharge amount of the developing solution, a discharge pressure of the developing solution, an atmospheric temperature and an atmospheric humidity in the developing unit, and

15 a setting change for a heating temperature and a heating time of the substrate in a heating unit.

19. The substrate processing apparatus as set forth in claim 14,

wherein an operation for starting a detection by said sensor can be
20 performed in the side of said substrate processing apparatus or in the side of said remote operation unit with said communication network put therebetween; and

wherein an operation for stopping the detection by said sensor can be performed only in the side of said substrate processing apparatus.

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20. The substrate processing apparatus as set forth in claim 14,

wherein said sensor can selectively detect the approach of the person other than workers identified in advance.

21. A remote operation unit,

5 capable of remotely operating a substrate processing apparatus by transmitting a remote operation information to a side of said substrate processing apparatus through a communication network and providing the remote operation information to said substrate processing apparatus; and

10 wherein the remote operation information transmitted to the side of said substrate processing apparatus is provided only when there is an allow setting for the remote operation by a worker in the side of said substrate processing apparatus.

22. The remote operation unit as set forth in claim 21, further comprising:

15 an allow-setting section for performing the allow setting of the remote operation is provided only in the side of said substrate processing apparatus of said communication network.

23. The remote operation unit as set forth in claim 21,

20 wherein the allow setting of the remote operation is divided into plural stages.

24. The remote operation unit as set forth in claim 21, further comprising:

25 a sensor for detecting an approach of a person to said substrate processing apparatus in the side of said substrate processing apparatus.

25. The remote operation unit as set forth in claim 21,
wherein an information communication performed through said
communication network is enabled only when there is an allow setting for a
communication.

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26. The remote operation unit as set forth in claim 25,
wherein an allow setting of the remote operation accompanying a
driving for said substrate processing apparatus and an allow setting of the
remote operation not accompanying the driving for said substrate processing
10 apparatus are included in separate stages.

27. The remote operation unit as set forth in claim 26,
wherein the remote operation accompanying the driving of said
substrate processing apparatus is a remote operation accompanying a physical
15 movement with respect to various types of elements including a substrate
carrier member in said substrate processing apparatus, and

wherein the remote operation not accompanying the driving of said
substrate processing apparatus is a remote operation not accompanying the
physical movement with respect to the various types of elements.

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28. The remote operation unit as set forth in claim 26,
wherein the remote operation accompanying the driving of said
substrate processing apparatus comprising:

a position adjustment for a substrate carrier arm, a resist solution
25 discharge nozzle in a resist coating unit and a developing solution discharge
nozzle in a developing unit in said substrate processing apparatus, and

a movement confirmation of the substrate carrier arm, the resist solution discharge nozzle and the developing solution discharge nozzle,

wherein the remote operation not accompanying the driving of said substrate processing apparatus comprising:

5 a setting change for a discharge amount of the resist solution, a discharge pressure of the resist solution, a turning speed of a substrate, an atmospheric temperature and an atmospheric humidity in the resist coating unit,

10 a setting change for a discharge amount of the developing solution, a discharge pressure of the developing solution, an atmospheric temperature and an atmospheric humidity in the developing unit, and

a setting change for a heating temperature and a heating time of the substrate in a heating unit.

15 29. The remote operation unit as set forth in claim 24,

wherein an operation for starting a detection by said sensor can be performed in the side of said substrate processing apparatus or in the side of said remote operation unit with said communication network put therebetween; and

20 wherein an operation for stopping the detection by said sensor can be performed only in the side of said substrate processing apparatus.

30. The remote operation unit as set forth in claim 24,

25 wherein said sensor can selectively detect the approach of the person other than workers identified in advance.

31. A communication method performed between a remote operation unit operating a substrate processing apparatus from a remote place and said substrate processing apparatus through a communication network, and in which allow/deny settings for the communication can be set in a side of said substrate processing apparatus with respect to various types of information communicated between said remote control unit and said substrate processing apparatus, comprising the steps of:

setting the communication of said various types of information to the deny setting when said substrate processing apparatus is normally running,
10 and

setting the communication of said various types of information to the allow setting selectively when some trouble occurs at said substrate processing apparatus.